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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/098,642	03/15/2002	Tiecheng A. Qiao	84027WFN	7342

7590 08/06/2004

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EXAMINER

FORMAN, BETTY J

ART UNIT	PAPER NUMBER
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1634

DATE MAILED: 08/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/098,642

Applicant(s)

QIAO ET AL.

Examiner

BJ Forman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-20 is/are allowed.
- 6) ☒ Claim(s) 21-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

FINAL ACTION

Status of the Claims

1. This action is in response to papers filed 30 June 2004 in which claims 1 and 7 were amended. All of the amendments have been thoroughly reviewed and entered.

The previous rejections in the Office Action dated 9 April 2004, not reiterated below, are withdrawn in view of the amendments. All of the arguments have been thoroughly reviewed and are discussed below as they apply to the instant grounds for rejection. New grounds for rejection, necessitated by the amendments are discussed.

Claims 1-25 are under prosecution.

Information Disclosure Statement

2. The references listed on the 1449 received 9 January 2004 have been reviewed and considered. A copy of the initialed 1449 is enclosed with this action. A copy of the duplicate 1449 filed 2 July 2004 is also enclosed.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole

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would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walt et al (WO 00/16101, published 23 March 2000) in view of Porter et al (U.S. Patent No. 6,146,899, filed 26 February 1999).

Regarding Claim 21, Walt et al disclose a method of identifying nucleic acid samples comprising providing a microarray including a substrate coated with a composition including a population of microspheres dispersed in a fluid containing a precursor to a gelling agent and immobilized at random positions on the substrate (i.e. the randomly mixed microspheres within a solution are dripped onto the substrate wherein upon evaporation of the solution, the solution holds them in place and wherein the solution comprises solution such as Nafion, polyacrylamide or polyHEMA, page 22, lines 9-22). Walt et al further teach at least one subpopulation contains an optical barcode generated from a colorant (i.e. dye) associated with the microsphere (page 16, line 15-page 17, line 2). Walt et al further teach the microspheres include a nucleic acid probe (page 12, lines 8-10) and the method includes contacting the array with a fluorescently labeled target sequence (page 29, Table V) and detecting the color barcode of the subpopulation due to the target probe interaction (page 13, lines 12-35 and Claim 11) wherein at least one subpopulation has a luminescent property (i.e. fluorescence) and wherein detecting includes whole frame imaging capture of a resulting luminescent image resulting from probe-target interaction to produce a first image and obtain microsphere signature image (Fig. 8-9) to produce a first image and processing the first and second image to identify the nucleic acid (page 40, lines 1-15).

Walt et al further teach the method wherein the microspheres are on a planar support e.g. glass and illuminated using a confocal microscope (page 7, lines 14-17) but they do not further teach bright field illumination. However, it was bright field illumination coupled with confocal image collection was well known in the art at the time the claimed invention was made

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as taught by Porter et al who teach that bright field illumination facilitated focusing while minimizing photobleaching (Column 4, lines 57-62). It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the confocal illumination of Walt et al with the additional bright field illumination taught by Porter et al for the expected benefit of focusing the image while minimizing photobleaching as taught by Porter et al (Column 4, lines 57-62).

Regarding Claim 22, Walt et al disclose the method wherein said processing uses a pattern recognition algorithm to obtain the identification (page 32, line 5-page 35, line 12).

Regarding Claim 23, Walt et al disclose the method wherein each subpopulation has a unique optical signature (bar code) and a unique probe sequence (page 17, lines 15-19).

Regarding Claim 24, Walt et al disclose the method wherein the optical bar code is generated by two or more colorants i.e. each optical signature is comprises of a mixture of dyes (page 16, liens 25-28).

Regarding Claim 25, Walt et al disclose the method wherein the optical barcode is generated by a mixture of red, green and blue i.e. each optical signature is comprises of a mixture of dyes including red, green and blue dyes e.g. rhodamine, Malacite green, and Cascade Blue™ (page 16, line 25-page 17, line 2).

Response to Arguments

5. Applicant argues that combination of the Walt et al and Porter et al teaches would result in patterned microspheres because the method of Porter et al requires patterning. Applicant's assertion that the method of Porter et al requires patterning is acknowledged. However, Applicant has not pointed to support for such an assertion. Hence, the argument is not found persuasive. Furthermore, Porter et al is cited in the rejection above as teaching the claimed combination of bright field illumination and confocal image collection and the advantages of the combination.

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6. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Conclusion

7. Claims 1-20 are free of the prior art and may be placed in condition for allowance following resolution of the above rejection.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BJ Forman whose telephone number is (571) 272-0741. The examiner can normally be reached on 6:00 TO 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on (571) 272-0782. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

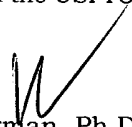
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.



BJ Forman, Ph.D.
Primary Examiner
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August 4, 2004